

**CLAIMS:**

What is claimed is:

1. A method for addressing a network extension element for a synchronous optical network, comprising:

addressing an extension network element using the fourth field of a TL1 message to set up a SONET connection.

2. The method according to claim 1, further comprising:

receiving a command message including an extension network element identifier in the fourth field of a TL1 message;

replacing the extension network element identifier with a session identifier; and

transmitting the modified command message to an extension network element.

3. The method according to claim 2, further comprising:

receiving the modified command at an extension network element;

processing the modified command; and

transmitting a command response including the session identifier back to the network element.

4. The method according to claim 3, further comprising:

accepting the command response at the network element;

determining the port to transmit the command response based on the session ID;

replacing the session ID with an extension network element identifier; and

forwarding the modified command response to the source of the original command.

5. A method of extending an optical network, comprising:

receiving a command message from the optical network including a port identifier specifying the port of a network element that is connected to an extension network element; processing the command message at the extension network element; and sending a response message to the network element.

6. The method according to claim 5, further comprising:

identifying a DCC corresponding to the port identifier; and transmitting the command message to the extension network element over the identified DCC.

7. The method according to claim 6, further comprising:

replacing the port identifier with a session identifier in the command message prior to the transmitting.

8. The method according to claim 7, further comprising:

replacing the session identifier with the port identifier in the response message.

9. The method according to claim 8, further comprising:

transmitting the response message over the network.

10. A system for extending an optical network, comprising:

an extension network element for connection to a network element;

wherein the extension network element is configurable to process command messages received from a network element without regard to the terminal identifier within the messages.

11. The system according to claim 10, wherein the extension network element is configurable to process command messages received from a network element in connection with a local session identification established between the network element and the extension network element.

12. The system according to claim 11, wherein the extension network element exchanges command messages and responses with the network element via a DCC connection.

13. The system according to claim 11, wherein the extension network element does not have a separate terminal identification stored in the routing table of network elements within the network to which the extension network element is connected.